

1. An antenna, comprising:

an antenna element formed of conductive loaded resin-based materials, wherein said antenna element is flat having an outer periphery and said outer periphery has a length;

5 a bobbin core formed of said conductive loaded resin-based materials;

attachment elements formed of said conductive loaded resin-based materials wherein said attachment elements attach said bobbin core to said antenna element and form electrical connections between said bobbin core and said antenna element;

10 a length of conductive wire, having a first end and a second end, wound around said bobbin core thereby forming a number of turns of said conductive wire around said bobbin core, wherein said conductive wire has an insulating material formed thereon thereby insulating each of said turns of said conductive wire from said bobbin core and from other said turns of said conductive wire; and

15 a center frequency related to said length of said outer periphery of said antenna element and said number of turns of said conductive wire around said bobbin core.

2. The antenna of claim 1 wherein said conductive loaded resin-based materials comprise micron conductive powders or micron conductive fibers.

3. The antenna of claim 1 wherein said conductive loaded resin-based materials comprise micron conductive powders or micron conductive fibers and a resin host, the ratio of the weight of said micron conductive powders or micron conductive fibers to the weight of said resin host is between about 0.14 and 0.80, and the resistivity of said conductive loaded resin based materials is between about 5 and 25 ohms per square.

4. The antenna of claim 1 wherein said length of said outer periphery of said antenna element is an integral multiple of one quarter wavelength of said operating frequency.

5. The antenna of claim 1 wherein said conductive loaded resin-based materials comprises petrochemicals.

6. The antenna of claim 1 wherein said conductive loaded resin-based materials comprises silicones.

7. The antenna of claim 1 wherein said conductive loaded resin-based materials comprises polyesters with woven or webbed micron conductive fibers forming a cloth like material.

8. The antenna of claim 1 wherein said antenna can be a radiating antenna, a receiving antenna, or both.

9. The antenna of claim 1 wherein said center frequency is between about 3 kilohertz and 300 gigahertz.

10. The antenna of claim 1 further comprising a coaxial cable having a center connector  
5 electrically connected to said first end of said length of conductive wire and an outer  
conductor connected to said second end of said length of conductive wire whereby  
electrical power can be delivered to or extracted from said antenna.

11. The antenna of claim 1 wherein said first antenna element has the shape of a circular  
10 disk.

12. An antenna, comprising:

a first antenna element formed of conductive loaded resin-based materials,  
wherein said first antenna element is flat having a first outer periphery and said first outer  
periphery has a first length;

5 a second antenna element formed of conductive loaded resin-based materials,  
wherein said second antenna element is flat having a second outer periphery and said  
second outer periphery has a second length;

a first bobbin core formed of said conductive loaded resin-based materials;

a second bobbin core formed of said conductive loaded resin-based materials;

10 first attachment elements formed of said conductive loaded resin-based materials  
wherein said first attachment elements attach said first bobbin core to said first antenna  
element and form electrical connections between said first bobbin core and said first  
antenna element;

second attachment elements formed of said conductive loaded resin-based  
15 materials wherein said second attachment elements attach said second bobbin core to said  
second antenna element and form electrical connections between said second bobbin core  
and said second antenna element;

a first length of conductive wire, having a first end and a second end, wound  
around said first bobbin core thereby forming a first number of turns of said conductive  
20 wire around said first bobbin core wherein said conductive wire has an insulating  
material formed thereon thereby insulating each of said first turns of said conductive wire  
from said first bobbin core and from other said first turns of said conductive wire;

a second length of said conductive wire, having a first end and a second end,  
wound around said second bobbin core thereby forming a second number of turns of said  
conductive wire around said second bobbin core wherein said conductive wire has an  
insulating material formed thereon thereby insulating each of said second turns of said  
5 conductive wire from said second bobbin core and from other said second turns of said  
conductive wire;

a first frequency related to said first number of turns of said conductive wire  
wound around said first bobbin core and said first length of said first outer periphery of  
said first antenna element;

10 a second frequency related to said second number of turns of said conductive wire  
wound around said second bobbin core and said second length of said second outer  
periphery of said second antenna element; and

a center frequency related to said first frequency and said second frequency.

15 13. The antenna of claim 12 wherein said center frequency is between said first frequency  
and said second frequency.

14. The antenna of claim 12 wherein said center frequency, said first frequency, and said  
second frequency are equal.

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15. The antenna of claim 12 wherein said conductive loaded resin-based materials  
comprise micron conductive powders or micron conductive fibers.

16. The antenna of claim 12 wherein said conductive loaded resin-based materials comprise micron conductive powders or micron conductive fibers and a resin host, the ratio of the weight of said micron conductive powders or micron conductive fibers to the weight of said resin host is between about 0.14 and 0.80, and the resistivity of said  
5 conductive loaded resin based materials is between about 5 and 25 ohms per square.

17. The antenna of claim 12 wherein said first length of said first outer periphery of said first antenna element is an integral multiple of one quarter wavelength of said first center  
10 frequency.

18. The antenna of claim 12 wherein said second length of said second outer periphery of said second antenna element is an integral multiple of one quarter wavelength of said second center frequency.

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19. The antenna of claim 12 wherein said conductive loaded resin-based materials comprises petrochemicals.

20. The antenna of claim 12 wherein said conductive loaded resin-based materials  
20 comprises silicones.

21. The antenna of claim 12 wherein said conductive loaded resin-based materials comprises polyesters with woven or webbed micron conductive fibers forming a cloth like material.

5 22. The antenna of claim 12 wherein said antenna can be a radiating antenna, a receiving antenna, or both.

23. The antenna of claim 12 wherein said first frequency is about 137 megahertz and said second frequency is about 152 megahertz.

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24. The antenna of claim 12 wherein said center frequency is between 137 megahertz and 152 megahertz.

15 25. The antenna of claim 12 wherein said first frequency and said second frequency are within about 20% of the mean of said first frequency and said second frequency.

26. The antenna of claim 12 wherein said center frequency is between about 3 kilohertz and 300 gigahertz.

27. The antenna of claim 12 further comprising a coaxial cable having a center connector electrically connected to said first end of first length of conductive wire and to said second end of said second length of conductive wire, and an outer conductor connected to said second end of said first length of conductive wire and said first end of said second length of conductive wire whereby electrical power can be delivered to or extracted from said antenna.

28. The antenna of claim 12 wherein said first antenna element and said second antenna element each have the shape of one half of a circular disk.

29. The antenna of claim 12 wherein said first antenna element and said second antenna element lie in the same plane.

30. The antenna element of claim 12 wherein said first antenna element is the mirror image of said second antenna element.